In the Claims

Please substitute the claims as set forth below in a complete listing. Language added is shown underlined and language deleted is shown in strike through or enclosed in brackets. The amendments include no new matter and are fully supported in the application as filed.

1.(currently amended) A method of monitoring an air atmosphere for a harmful biological or chemical agent, the method comprising:

providing a plurality of mammalian respiratory airway epithelial cells borne on a porous support;

contacting the porous support with a cell nutrient medium and with air by positioning said porous support at an air-liquid interface between the cell nutrient ~~liquid~~ medium and the air;

sampling the air atmosphere to thereby create an air flow over the air-liquid interface so that the respiratory epithelial cells borne on the porous ~~silicone~~ support are contacted by the sampled air; and

monitoring the respiratory epithelial cells for at least one physiological parameter indicating the cells have been exposed to the harmful agent.

2.(currently amended) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells consists of ~~primary~~ rabbit cells.

3.(currently amended) The method of claim 1, further comprising sufficient ~~the~~ cell nutrient medium in contact with at least a lower surface of the porous support to nourish the plurality of respiratory airway epithelial cells.

4.(original) The method of claim 1, wherein the porous support comprises silicone.

5.(original) The method of claim 1, wherein the porous support comprises a nanoporous silicone composition.

6.(original) The method of claim 1, wherein the porous support consists of a nanoporous silicone composition having pores no larger than one micrometer in diameter.

7.(currently amended) The method of claim 1, wherein the porous support comprises a silicone composition ~~wherein the~~ having pores consist of a sufficiently small diameter to prevent the plurality of mammalian respiratory airway epithelial cells from ~~falling thereinto~~ entering.

8.(original) The method of claim 1, wherein the porous support comprises a nanoporous silicone composition having an average pore size smaller than the average size of the plurality of mammalian respiratory airway epithelial cells.

9.(original) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells comprises a confluent layer of cells.

10.(original) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells comprises a monolayer of cells.

11.(original) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells.

12.(original) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells and the at least one physiological parameter monitored comprises ciliary beating frequency of the ciliated cells.

13.(original) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells and the at least one physiological parameter monitored comprises an electrical response of the plurality of mammalian respiratory airway epithelial cells.

14.(original) The method of claim 1, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells and the at least one physiological parameter monitored comprises mucin secretion from the goblet cells.

15.(original) The method of claim 1. wherein the harmful biological or chemical agent comprises a toxin.

16.(original) The method of claim 1, wherein the harmful biological or chemical agent comprises a biological warfare agent.

17.(original) The method of claim 1, wherein the harmful biological or chemical agent comprises a chemical warfare agent.

18.(original) A method of monitoring an air atmosphere for a harmful biological or chemical agent, the method comprising:

providing a porous support having an upper surface and a lower surface, and having a plurality of channels etched on the upper surface of the porous support;

contacting the porous support with a cell nutrient medium and with air by positioning said porous support at an interface between the cell nutrient medium and the air so that the lower surface of the support is in contact with the cell nutrient medium and so that the upper surface of the support is in contact with the air;

seeding a plurality of mammalian respiratory airway epithelial cells into the plurality of channels etched on the upper surface of the porous support;

sampling the air atmosphere to thereby create an air flow over the upper surface of the porous support so that the plurality of mammalian respiratory airway epithelial cells seeded into the etched channels are contacted by the sampled air; and

monitoring the plurality of mammalian respiratory airway epithelial cells for at least one physiological change indicating the cells have been exposed to the harmful agent.

19.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells are primary rabbit cells.

20.(original) The method of claim 18, further comprising sufficient cell nutrient medium in contact with a lower surface of the porous support to nourish the airway epithelial cells.

21.(original) The method of claim 18, wherein the porous support comprises silicone.

22.(original) The method of claim 18, wherein the porous support comprises a nanoporous silicone composition.

23.(original) The method of claim 18, wherein the porous support consists of a nanoporous silicone composition having pores no larger than one micrometer in diameter.

24.(original) The method of claim 18, wherein the porous support comprises a silicone composition wherein the pores consist of a sufficiently small diameter to prevent the plurality of mammalian respiratory airway epithelial cells from falling thereinto.

25.(original) The method of claim 18, wherein the porous support comprises a nanoporous silicone composition having an average pore size smaller than the average size of individual cells in the plurality of mammalian respiratory airway epithelial cells.

26.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells comprises a confluent layer of cells.

27.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells comprises a monolayer of cells.

28.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells.

29.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells and the at least one physiological parameter monitored comprises ciliary beating frequency of the ciliated cells.

30.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells and the at least one physiological parameter monitored comprises an electrical response of the plurality of mammalian respiratory airway epithelial cells.

31.(original) The method of claim 18, wherein the plurality of mammalian respiratory airway epithelial cells comprises ciliated cells and goblet cells and the at least one physiological parameter monitored comprises mucin secretion from the goblet cells.

32.(original) The method of claim 18, wherein the harmful biological or chemical agent comprises a toxin.

33.(original) The method of claim 18, wherein the harmful biological or chemical agent comprises a biological warfare agent.

34.(original) The method of claim 18, wherein the harmful biological or chemical agent comprises a chemical warfare agent.